ELECTRONIC INNOVATIONS IN ACTION

TUBES

—PRODUCT INFORMATION—

6LG6

Compactron Beam Pentode

FOR TV HORIZONTAL-DEFLECTION AMPLIFIER APPLICATIONS

- COLOR TV TYPE
- LOW KNEE—MINIMUM "SNIVETS"
- 28 WATTS PLATE DISSIPATION
- LOW GRID DRIVE

The 6LG6 is a compactron beam-power pentode primarily designed for use as the horizontal-deflection amplifier in color television receivers. It is characterized by having a very low knee voltage, high plate-to-screen ratio, and high peak current capability. These efficiency factors make the 6LG6 widely adaptable for use in circuits using shunt or variable-bias type regulation with B+ supply voltages from 240 to over 400 volts. Its low knee minimizes "snivets" without the necessity of supplying special voltages to the beam plates.

GENERAL

ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings

Heater Voltage, AC or DC*	6.3±0.6	Volts
Heater Current‡	2.0	Amperes
Direct Interelectrode Capacitances, approximate§		
Grid-Number 1 to Plate: (g1 to p)	0.8	pf
Input: g1 to (h + k + g2 + b.p.)	25	pf
Output: p to (h + k + g2 + b.p.)	13	pf

MECHANICAL

Operating Position - Any
Envelope - T-12, Glass
Base - E12-74, Button 12-Pin
Top Cap - C1-1, Small
Outline Drawing - EIA 12-89

Maximum Diameter	1.563	Inches
Minimum Diameter	1.437	Inches
Maximum Over-all Length	4.125	Inches
Maximum Seated Height	3.750	Inches
Minimum Seated Height	3.500	Inches

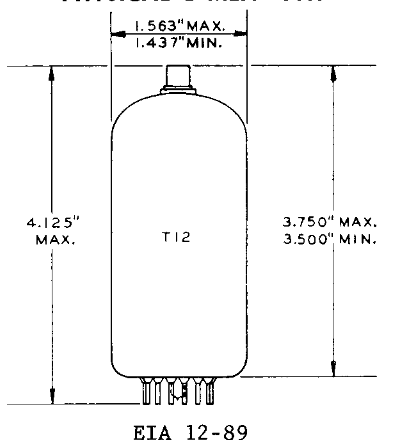
MAXIMUM RATINGS

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all other electron devices in the equipment.

PHYSICAL DIMENSIONS

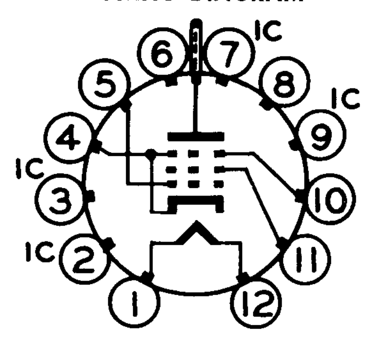


EIA 12-89

TERMINAL CONNECTIONS

Pin 1 - Heater
Pin 2 - Internal Connection - Do Not Use
Pin 3 - Internal Connection - Do Not Use
Pin 4 - Cathode and Beam Plates
Pin 5 - Grid Number 1
Pin 6 - No Connection
Pin 7 - Internal Connection - Do Not Use
Pin 8 - No Connection
Pin 9 - Internal Connection - Do Not Use
Pin 10 - Cathode and Beam Plates
Pin 11 - Grid Number 2 (Screen)
Pin 12 - Heater
Cap - Plate

BASING DIAGRAM



EIA 12HL

MAXIMUM RATINGS (Cont'd)

HORIZONTAL-DEFLECTION AMPLIFIER SERVICE¶— DESIGN-MAXIMUM VALUES UNLESS OTHERWISE INDICATED

Rating	Value	Unit
DC Plate-Supply Voltage (Boost + DC Power Supply)	900	Volts
Peak Positive Pulse Plate Voltage (Absolute Maximum Value)	7500	Volts
Peak Negative Pulse Plate Voltage	100	Volts
Screen Voltage	200	Volts
Peak Negative Grid-Number 1 Voltage	300	Volts
Plate Dissipation#	28	Watts
Screen Dissipation	5.0	Watts
DC Cathode Current	315	Milliamperes
Peak Cathode Current	1100	Milliamperes
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode		
DC Component	100	Volts
Total DC and Peak	200	Volts
Heater Negative with Respect to Cathode		
Total DC and Peak	200	Volts
Grid Number 1 Circuit Resistance		
With Feedback Type High Voltage Regulation	1.8	Megohms
With Shunt-Type High Voltage Regulation (Switching Mode)	2.2	Megohms
Bulb Temperature∆	225	C

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

Characteristic				Unit
Plate Voltage	6000	50	175	Volts
Screen Voltage	125	125	125	Volts
Grid-Number 1 Voltage	---	0¢	-23	Volts
Plate Resistance, approximate	---	---	7500	Ohms
Transconductance	---	---	11500	Micromhos
Plate Current	---	600	90	Milliamperes
Screen Current	---	42	1.7	Milliamperes
Grid-Number 1 Voltage, approximate				
Ib = 1.0 Milliamperes	-125	---	-45	Volts
Triode Amplification Factor**	---	---	3.6	

NOTES

* The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.

‡ Heater current of a bogey tube at Ef = 6.3 volts.

§ Without external shield.

¶ For operation in a 525-line, 30-frame television system as described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission. The duty cycle of the voltage pulse must not exceed 15 percent of one scanning cycle.

\# In stages operating with grid-leak bias, an adequate cathode-bias resistor or other suitable means is required to protect the tube in the absence of excitation.

∆ Measured using a thermocouple attached to a 0.1-inch wide phosphor-bronze ring placed at the hottest location on the bulb.

¢ Applied for short interval (two seconds maximum) so as not to damage tube.

** Triode connection (screen tied to plate) with Eb = Ec2 = 125 volts, and Ec1 = -25 volts.

AVERAGE PLATE CHARACTERISTICS

Ef = RATED VALUE
Ec2 = 125 VOLTS

Ib @ Ec1 = 0 VOLTS
-5.0
-10
-15
-20
-25
-30
-35

Ic2 @ Ec1 = 0 VOLTS
-5.0
-10
-15
-20
-25

PLATE CURRENT (Ib) IN MILLIAMPERES
1000
800
600
400
200
0

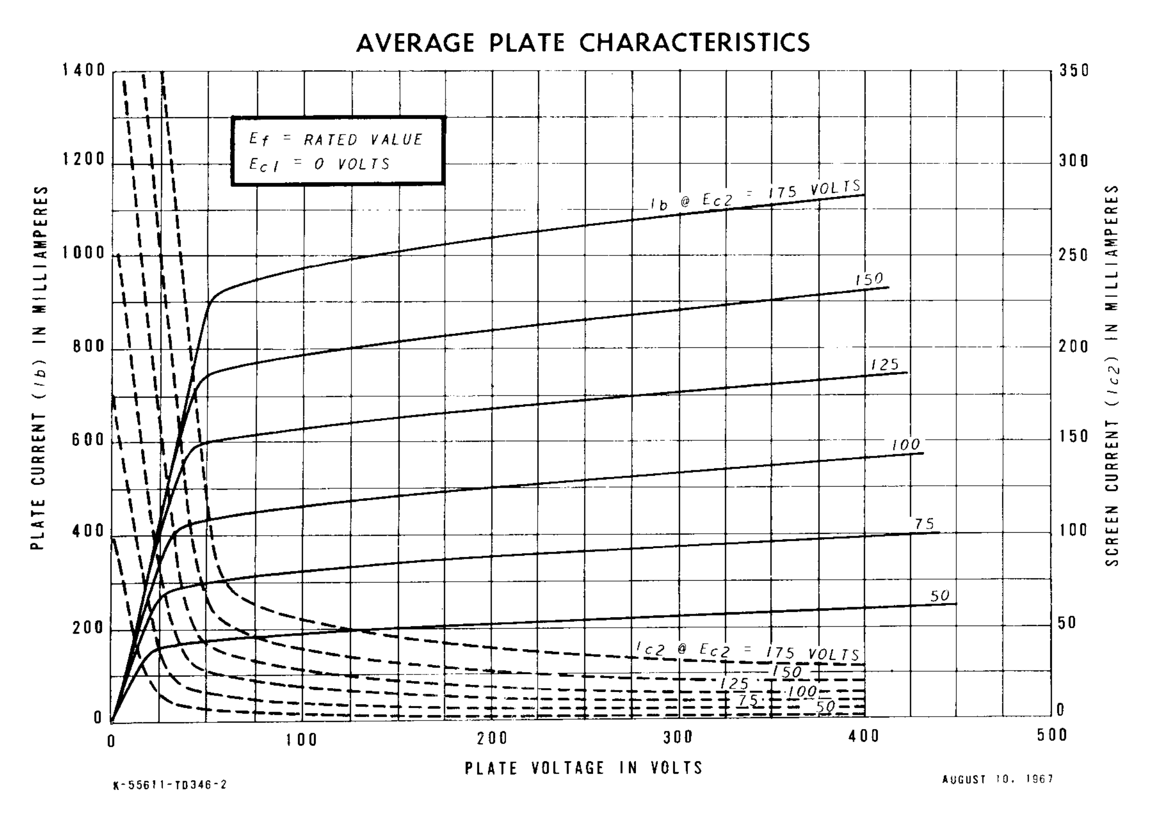
SCREEN CURRENT (Ic2) IN MILLIAMPERES
100
80
60
40
20
0

PLATE VOLTAGE IN VOLTS
0
100
200
300
400
500

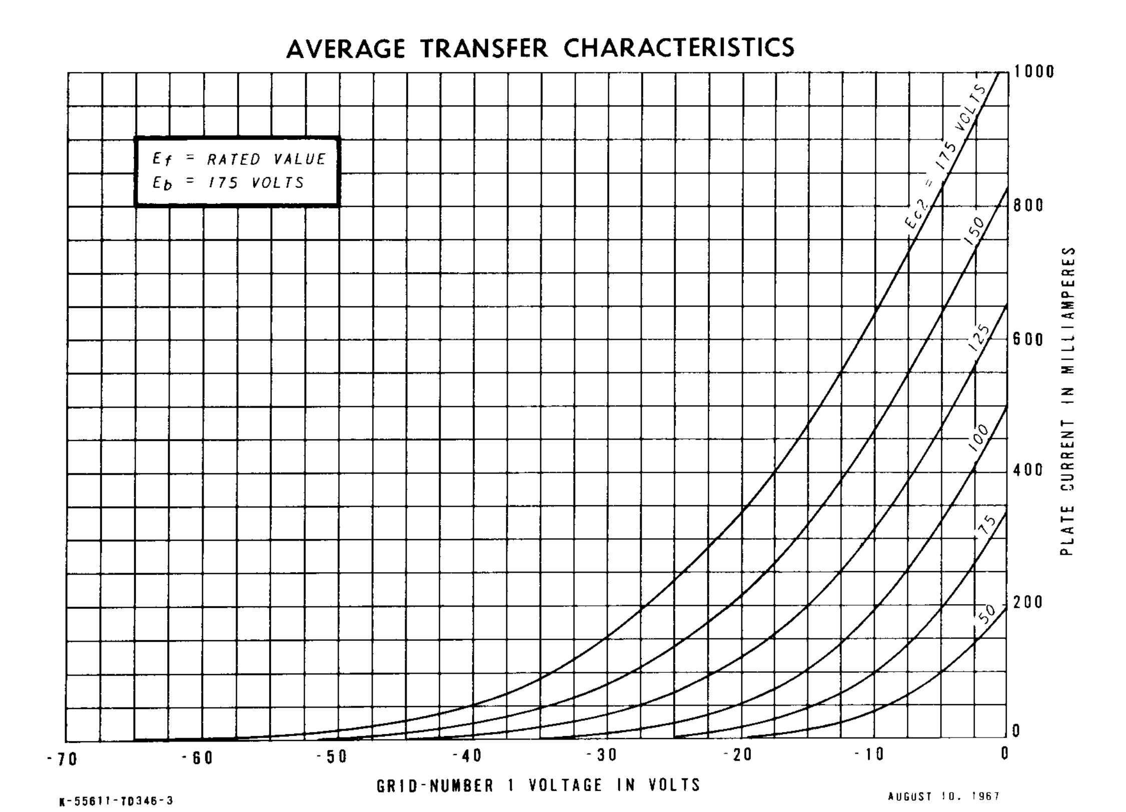
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AVERAGE PLATE CHARACTERISTICS

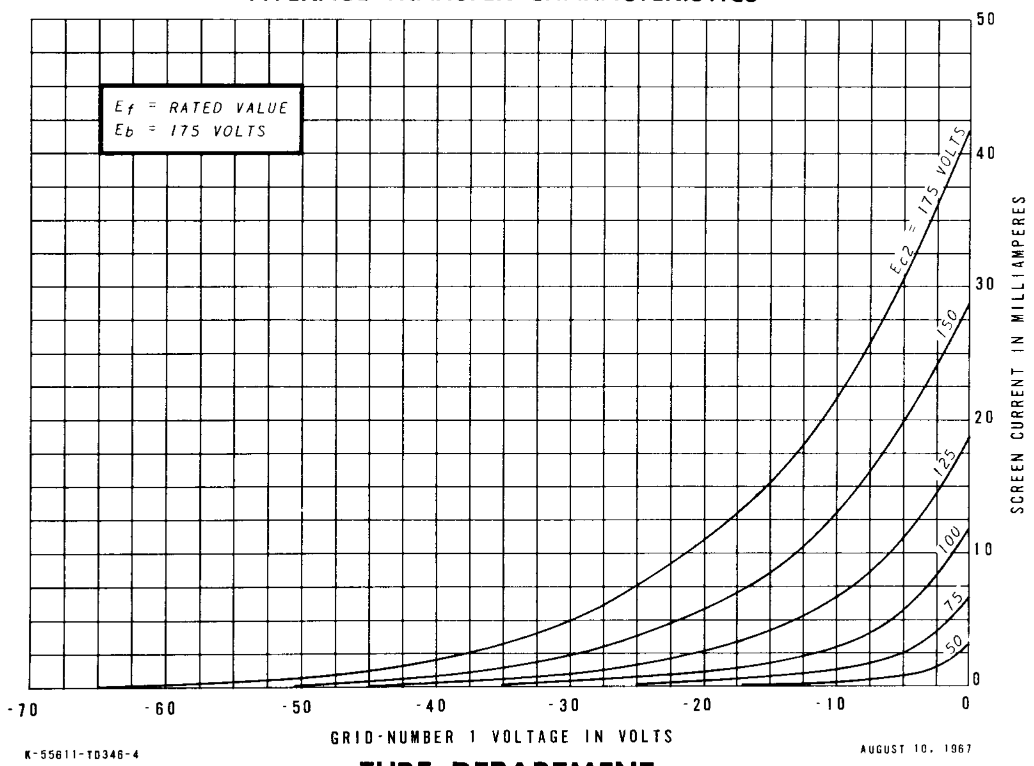


AVERAGE TRANSFER CHARACTERISTICS





AVERAGE TRANSFER CHARACTERISTICS



TUBE DEPARTMENT


GENERAL ELECTRIC

Owensboro, Kentucky 42301